

Austronesian Megalith Transport Today: No hypotheses, just facts-figures-photographs

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At the *Rapa Nui Rendezvous* in Laramie, Wyoming in August of 1993, there were no less than three speakers who gave lectures on their investigations regarding the transport of *moai* in an erect position from the quarry at Rano Raraku to the *ahu* where they were to be placed.

Endeavors were made to give an interpretation to the legend that these statues 'walked' from the quarry to their final sites. One speaker made experiments trying to move a modern concrete *moai* by alternate lifting under the right and left sides of the base with a lever in order to make it 'tango' forwards, only to find out that the weight of the unlifted side became too much, causing it to sink into the soil and topple over. The second speaker let a computer do all the work and calculations, arriving at a final conclusion that this form of transport was technically possible without undue strain on the resources of the island at that time. This conclusion was the only one that was not necessary, because the *moai* on their *ahu* form the clearest proof that the transport was possible. The question is only: how? The third speaker also experimented with a home-made concrete *moai*, tying it onto a big sledge made with two long parallel trunks like those of the Chilean wine palm (then still available on the island for such purposes). In this way he spread the weight of the *moai* over a great surface, thereby reducing the risk of toppling over. The sledge was then rolled forward on hard wooden rollers, perpendicular to the direction of the sledge. These were lifted at its back as it moved forward and put down in front again, until it reached its final destination. This last experiment was executed by Charles Love of Western Wyoming College. He claimed to have been able to move his *moai* of 9 tons weight with the help 35 men over a distance of 40 meters in only 2 minutes; that is, by a speed of 1.2 kilometer per hour. Therefore this experiment can be considered as successful.

What struck me about these experiments was that so much time, talent and ingenuity was spent on the answer to this question of how it was done, whereas no one will be able to prove that his or her thesis is the right one, simply because the last actual transport took place around the year AD 1450. After that time, the trunks of the Chilean wine palm were no longer available. So this will always remain one of the 'enigmas' of Easter Island. Or will it?

Little did these three investigators (or myself for that matter) realize that within a month of the *Laramie Rendezvous* somewhere else in the world a huge megalith was about to be transported in the traditional, millenium-old Austronesian way from its quarry to its final destination.

It was not so much a coincidence that I happened to visit

the island where this took place, the coincidence was that I found the spot. Let me no longer talk in riddles: I invite the reader to look at the map of the western part of Indonesia on which I have indicated two islands: Nias and Sumba (Figure 1). These two islands lie far from shipping routes, are very isolated, and did not produce spices or other products that were much in demand in times past. The result is that they were left alone and not touched by the great religious expansions over the ages of Hinduism, Buddhism, Christianity or Islam.

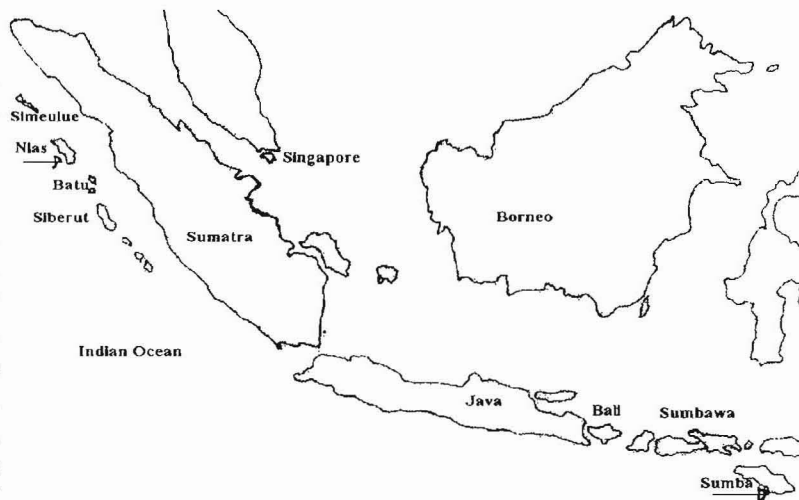


Figure 1. Map showing location of Nias and Sumba islands.

It was only with the arrival of steam navigation, after the opening of the Suez Canal towards the end of the 19th century, that the population of these islands discovered they had been a Dutch colony for the past 300 years. When the Dutch discovered these people were headhunters, the missionaries were let loose on them. However, until the second World War, the majority of the population of both islands maintained their old animistic beliefs and even today over 80% of the Sumbanese stick to their 'Marapu' religion. The result is that on these two islands (and a few others) old customs have been better maintained than anywhere else in Indonesia. And that is why it is no coincidence that I have visited both of them several times.

It is from these islands that, either directly, or by detour from Southern China and the Phillipines, the great migration through Polynesia and ending on Easter Island is supposed to have started. The Austronesian languages, as well as many characteristic customs show the family relationship: ancestor-worship and the squandering of resources in order to gain prestige for the clan, periodical shows of male bravery, and also tattooing. Ancestor-worship should not be so much seen



Figure 2. Stone with traditional Nias symbols: shield, spear and, at the top, necklace for protection against head hunters. (All photographs by the author).

as a pure type of worship, but more as a profitable barter: presenting offerings can be considered as an advance payment on social security today and continuing in the hereafter. The living provide the dead with food, wealth, and entertainment in the other world and, in exchange, expect the supernatural blessings of increased fertility, happiness and prosperity. This is exactly what made the Rapanui direct so much of their productive capacity to the creation and transport of the *moai*. The race to make the biggest megalith dominates social life on Sumba today as it did on Rapa Nui before 1450. Nias certainly has more megaliths than anywhere else: many thousands, but of much smaller size than those on Rapa Nui. They distinguish between erect male megaliths and large horizontal stone slabs (female ones), on which "the beheaded corpses were deposited and left to rot" as some historians allege. Today these horizontal slabs are used to dry laundry on!

On Sumba we find the heaviest megaliths. Although smaller in size than those on Rapa Nui, they are made from much heavier stone. (Sumba is not volcanic; the light tuff found on Rapa Nui

is unknown there). They also have erect and horizontal megaliths; the latter are used to cover or to form sarcophagi for the deceased. Janet Allison Hoskins (1986) describes the process of creation and transport as follows:

"In most of West Sumba living men can organize the construction of their own stone tombs, starting with the long process of dragging the boulders with human labor from faraway quarries. Huge limestone boulders, weighing from ten to thirty tons, are lifted onto a wooden platform called a 'ship' and dragged with vines to a hilltop village. A textile banner hung on top of the stone is the 'mast' which allows the ship to sail forward to its destination, while the participants are urged on by the singing of songs which narrate the earlier travels of ancestral heroes. Grave building is thus an occasion for staging a series of prestige feasts which the wealth and importance of local leaders are tested by their ability to marshal labor and redistribute meat". In my opinion, if we would exchange the word 'meat' for 'lobster' this could be a description of Rapa Nui before 1450. The ship symbolism is interesting because it is also found on Rapa Nui. Marie Jane Adams (1974:335) writes that although the Sumbanese are not a seagoing people, families recall the relative positions of their forefathers in the boat which first brought the latter to Sumba and the transport of the megalith as a ship re-enacts symbolically the voyage and arrival of the Founder/Deity and his companions on Sumba. Here too the parallel with the Rapa Nui legend on Hotu Matu'a's arrival is evident.

As for the periodical shows of male bravery, the equivalent of the Rapa Nui *mad 'haka pei'*, stopped after 1991 because of too many accidents which occurred as contestants slid wildly downhill on their uncontrollable banana stems, resembles the Sumba '*pasola*': an annual mock war between two groups of hundreds of horsemen who, while galloping around with ferocious cries, hurl spears at one another with the result that serious wounds or sometimes death results.

When I visited Sumba in November 1993, I came across a megalith-transport for the second time. The first time was in Nias, in July of 1990. That time was more of a recreation because megaliths are no longer raised there; however the governor of the province of North Sumatra, to which Nias belongs, was to visit the island for the first time in years. So

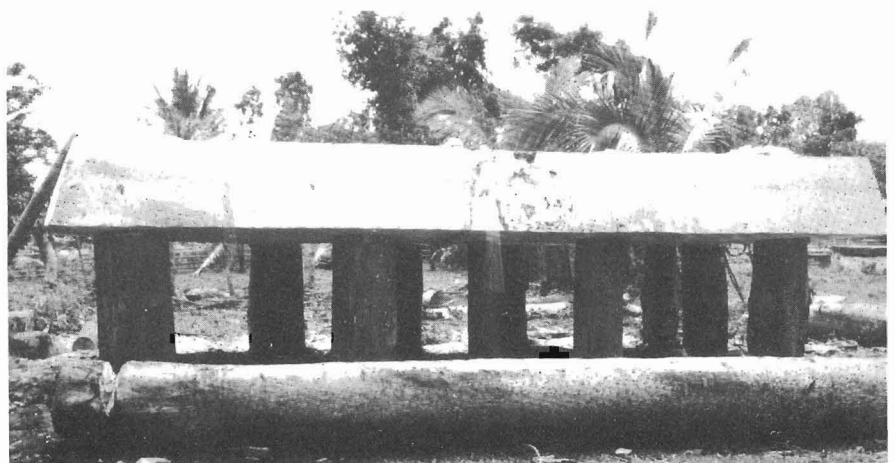


Figure 3. Large stone slab on wood construction.



Figure 4. Stone slab still on the temporary support with transport equipment in place.

the population of the village of Bawömataluo wished to honor him in the traditional way by carving a small megalith. Prior to his visit it was prematurely unveiled in order to allow me to take pictures (Figure 2). The photograph shows the stone with traditional Nias symbols: shield, sword and spear, and at the top a circular necklace for protection against headhunters. What is relevant here is the form of the sledge, made from two tree trunks that meet at the front, creating a wedge shape. We may assume this was the traditional form of the sledges used on Nias and it can be compared with those on Sumba.



Figure 5. Showing the sledge that carried the stone.

In November I came across a megalith under construction on Sumba. It was along the asphalted main road near Anakalang in the village of Waimamongu. [Incidentally, 'wai' in the Sumba language means water or river and should be compared with Rapa Nui and Tahitian 'vai' and Hawaiian 'wai' which means exactly the same.] Figure 3 shows a large



Figure 6. Wooden head fixed to the sledge.

horizontal slab of stone on a wood construction, later to be replaced by stone or cement pillars. After that, the fine carving takes place and then it will be ready for the burial. I asked the owner for details and he gave the following information: The stone was hewn from the quarry by 10 men in one week, then transported on a sledge made from the stems of the kapok tree. It took 100 men one day to cover the distance of 3 kilometers. He had no idea of its weight. When I complimented him on this work, he said, "Oh, this is nothing compared to the one further inland, you should look there."

So I was taken off to the village of Manokaka, a few miles further. When I arrived, I realized that I had 'hit the jackpot' and was looking at something that all Rapa Nui investigators would dearly love to see: a tremendous stone slab (Figure 4) in the same state of preparation as the previous one (still on its provisional wood support). There was an important difference: all the transport equipment was still at the site. The length of the sledge was enormous (Figure 5), and evidently this length was needed to divide the full weight of the stone. The sledge consisted of two tree trunks formed in a wedge shape, in conformity to those on Nias. The trunks show square holes in rows which are used to fix the stone; no question of transport in a vertical position here. For the actual transport, a large wooden head with mysterious blue eyes (Figure 6) is fixed at the stem of the sledge; I thought it might be a picture of the deceased. The head is dwarfed by the

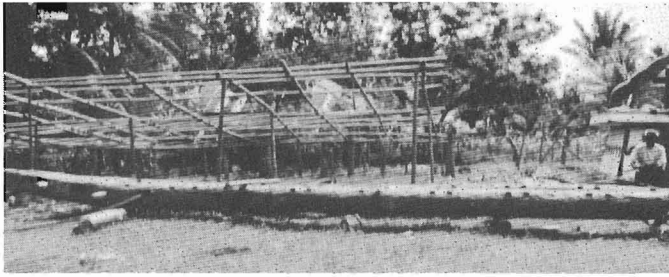


Figure 7. Sledge with head (left).

length of the sledge (Figure 7). Some of the arm-thick rattans [*liana*] from the jungle which were used to pull the sledge were still in place (Figure 8). When I took the picture, schoolboys began to chant the 'pulling-song', which--not surprisingly--reminded me of the song of the Volga boatmen. While this was going on, the lady of the house came out with baskets of betel-nuts for me to chew, the local sign of friendship and hospitality. As I was about to console her for the loss of her husband, for whose benefit I supposed the entire operation had taken place, it appeared that the gray haired man at her side was her husband, alive and well. So he was included in the final photograph (Figure 9). This was indeed one of those cases in which a living person organized the erection of his own tombstone, thereby showing his ability to marshal labor and redistribute meat.



Figure 8. Arm-thick rattans used to pull the sledge.

To what extent this had happened, the following figures will show. In the first place the weight of the megalith was calculated by an engineer from Java, who multiplied the cubic measures with the specific weight of this type of limestone: his estimate is no less than 46 tons. The quarry was 4 km from the erection site. 1500 people had been involved in the transport, taking turns, the male population of seven villages. Ten heavy rattans were used for pulling. I was told that 1000 men were pulling at one time, which would mean 100 per vine. Looking at Figure 8, I find this difficult to believe, even with pliant Indonesian bodies. Every male villager over 17 years could participate (the schoolboys appearing in Figure 8 were even afraid to touch the rattans until they had received permission to act as stand-ins for the photograph). There was no payment involved, but all participants were provided with food, music, entertainment and a sense of belonging during the entire operation. Pigs were slaughtered each day by the

dozen, and not at the meager rate of 3,000 calories per man day as calculated by Jo Anne Van Tilburg at Laramie in August. Food was provided until every participant had declared to have his belly full, thereby stretching the desirable 'redistribution of meat' to the maximum. No wonder the organizer had gained tremendously in prestige today and without doubt in the hereafter.

This transport took place in September 1993 but the equipment left in place because 'someone else might want to use it again in the future.'

When we finally compare the Austronesian reality today on Sumba with the three presentations made at Laramie on the basis of empirical experiments, we must conclude that Charles Love's was best in conformity with Sumba practice. The only essential difference is that Sumba sledges are wedge-shaped whereas the Wyoming sledge had parallel runners. Maybe this has to do with stability and road holding capacity. It struck me that childrens' toboggans also slightly taper to the front, probably for the same reason. Did the Austronesians learn from Eskimo experience in the snow or the other way around? More likely another case of independent invention.



Figure 9. Husband and wife participate in erecting his own tombstone

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